

What Is Claimed Is:

1. In a surface mounting device including an X-Y gantry mounted on a base frame, a plurality of head
5 units mounted on predetermined positions of the X-Y gantry, a parts feeder for supplying parts mounted on a printed circuit board carried to a parts mounting work position, the surface mounting device comprising:

10 a plurality of transfers movably mounted on both sides of the base frame in parallel with each other;

a driving means for moving the plurality of transfers;

15 a plurality of movable conveyers in X and Y directions mounted between the plurality of transfers; and

a plane power transmission device for generating a driving force for moving the plurality of conveyers into X and Y directions.

20 2. The surface mounting device of claim 1, wherein the plurality of transfers comprises a first and a second transfers and the first and the second transfers comprises:

25 a first and a second transfer base frames for guiding the printed circuit board, respectively;

a first and a second transfer rollers mounted on a predetermined position of the first and the second base

frames, respectively, for carrying the printed circuit board;

a first and a second belt members mounted connectively to the first and the second transfer
5 rollers.

3. The surface mounting device of claim 1, wherein the driving means is a moving magnet type linear motor.

10 4. The surface mounting device of claim 1, wherein
the driving means is a moving coil type linear motor.

5. The surface mounting device of claim 1, wherein the driving means is any one among a ball screw, a belt type power transmission means, and a linear power transmission means.

6. The surface mounting device of claim 1, wherein
the plurality of conveyers comprises a first and a
20 second conveyers and the first conveyor comprises:

a first conveyer base frame;

a first conveyer transfer roller rotated for transferring the printed circuit board carried by the first transfer to a parts mounting work position;

25 a first conveyer lifting member for lifting
the printed circuit board to a predetermined height and
then lowering the printed circuit board when the

mounting of parts is finished; and

a first conveyer discharging roller for discharging the printed circuit board to the second transfer, and

5 the second conveyer comprises:

a second conveyer base frame;

a second conveyer transfer roller rotated for transferring the printed circuit board carried by the first transfer to a parts mounting work position;

10 a second conveyer lifting member for lifting the printed circuit board to a predetermined height and then lowering the printed circuit board when the mounting of parts is finished; and

a second conveyer discharging roller for
15 discharging the printed circuit board to the second transfer.

7. The surface mounting device of claim 6, wherein a first and a second plane movers are mounted to lower
20 portions of the plurality of conveyers, respectively.

8. The surface mounting device of claim 1 or 6, wherein the plurality of conveyers further comprises a controller connected to a drive circuit for carrying the
25 printed circuit board with various speeds.

9. The surface mounting device of claim 1, wherein the plane power transmission device comprises a plane stator frame, and a first and a second plane movers carried with a predetermined direction at an upper
5 portion of the plane stator frame.

10. A surface mounting method for mounting parts on a printed circuit board, the surface mounting method comprising the steps of:

10 transferring the printed circuit board to one conveyer among a plurality of conveyers capable of moving from a first transfer, with a predetermined direction;

15 transferring the printed circuit board to another conveyer among the plurality of conveyers;

 transferring the printed circuit board to one conveyer of the plurality of conveyers, while electronic parts from a parts feeder are mounted onto the transferred printed circuit board;

20 mounting the electronic parts from the parts feeder again onto the transferred printed circuit board, while the printed circuit board onto which the parts have been mounted is transferred to the second transfer; and

25 transferring the printed circuit board onto which the parts have been mounted again to the second transfer, while a new printed circuit board is transferred to one

conveyer of the plurality of conveyers from the first transfer.

11. A surface mounting method for mounting parts
5 on a printed circuit board, the surface mounting method comprising the steps of:

transferring the printed circuit board sequentially to a plurality of conveyers movable from the first transfer in a predetermined direction;

10 moving the printed circuit board transferred firstly and placed on one of the plurality of conveyers to a predetermined position for thereby mounting electronic parts and at the same time, moving the printed circuit board transferred later and placed on
15 the other one of the plurality of conveyers to a predetermined position;

mounting the electronic parts on the printed circuit board moved to the predetermined position, while the printed circuit board onto which the parts have been
20 mounted is transferred to the second transfer movable in a predetermined direction; and

transferring the printed circuit board onto which the parts have been mounted to the second transfer movable in the predetermined direction, while a new
25 printed circuit board is transferred to one conveyer of the plurality of conveyers from the first transfer 20.

12. A surface mounting method for mounting parts on a printed circuit board, the surface mounting method comprising the steps of:

moving a first transfer to a position where the
5 plurality of conveyers each are positioned to move the printed circuit board sequentially;

moving the plurality of conveyers having the printed circuit board placed thereon to a predetermined position for thereby mounting parts from a plurality of
10 parts feeder; and

moving the conveyor to a predetermined position of the second transfer for thereby reducing a movement length when carrying the printed circuit board, as the conveyor having the printed circuit board onto which the
15 parts have been mounted placed thereon is moved in a predetermined direction.